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## Geographic variation in the Sharp-billed Treehunter *Heliobletus contaminatus*

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The Sharp-billed Treehunter *Heliobletus contaminatus* is a small (13–15 g) forest-dwelling furnariid of southeastern Brazil, from Espírito Santo to Rio Grande do Sul, eastern Paraguay, and northeastern Argentina (Misiones) (Meyer de Schauensee 1966). It is a common species in tall forest, where it associates with mixed-species flocks (Sick 1985, Stotz, pers. obs.).

The species was described from specimens collected at Nova Friburgo, Rio de Janeiro (Hellmayr 1925), and has been considered monotypic (Pinto 1978, Vaurie 1980). We have examined 60 specimens of *H. contaminatus* in the Museu de Zoologia da Universidade de São Paulo (MZUSP) and the Museu Nacional do Rio de Janeiro (MNRJ). We discovered that the population distributed south of the northeastern part of the state of São Paulo is quite distinct from the more northerly populations. We propose to name this population

### ***Heliobletus contaminatus camargoi* subsp. nov.**

*Holotype.* ♂, MZUSP 27638, Porto Cabral, Rio Paraná, São Paulo, Brazil. Collected 26 October 1941 by J. Lima.

*Diagnosis.* Possesses broad buffy streaks on the upper back, while nominate *contaminatus* has a plain back or pale hairstreaks caused by a pale rachis. In addition, *camargoi* averages larger (wing and tail, see Table 1) and has the buffy streaks on the lower breast and abdomen broader and more extensive than the nominate form.

*Description of holotype.* Upperparts Antique Brown (colour 37; capitalized colour names and numbers from Smithe 1975), crown feathers narrowly streaked with Cream Colour (colour 54) and darkening laterally to Sepia (colour 219), feathers of upper back broadly centred with Cream Colour, tertials and broad edges to other remiges and wing coverts (otherwise Hair Brown, colour 119A) near Antique Brown, but slightly more rufous, tail Cinnamon-Rufous (colour 40). Lores and broad superciliary stripe extending along nape Buff-Yellow (colour 53), sides of face mainly Sepia with auriculars based with Buff-Yellow, the sides of the neck Buff-Yellow, with an ochraceous tone, nearly joining the superciliary to enclose the dark sides of the face. Throat including malar region pale Buff-Yellow, paler in centre; remainder of underparts Light Drab (colour 119C), with broad streaks of Cream Colour, these becoming narrower on the abdomen; undertail coverts slightly darker with rufous tone and narrow pale streaks in centre.

*Measurements of holotype.* Flattened wing 70.0 mm; tail 55.0 mm; culmen length from anterior edge of nostril 8.9 mm, from base of skull 14.6 mm; tarsus 18.3 mm.

*Distribution* (see specimens examined and Fig. 1). Known from Brazil from São Paulo, south and west of the city of São Paulo, south to Rio Grande do Sul. We have not examined specimens from Argentina or Paraguay, but they should be referable to this form.

*Etymology.* We take great pleasure in naming this subspecies for our good friend and colleague, Dr Hélio F. Camargo, in recognition of his important contributions to Brazil ornithology and, especially, the avian collection of the Museu de Zoologia da Universidade de São Paulo.

*Specimens examined.* *H. c. contaminatus*. Rio de Janeiro: Teresópolis (5♀, 1♂), Nova Friburgo (2♂), Mauá (1♂), Parque Nacional do Itatiaia (2♂, 2♀). *H. c. contaminatus* × *camargoi*. São Paulo: Serra da Bocaina (4♂, 2♀), Bananal (3♂, 1♀), Mogi das Cruzes (1♂), Campos do Jordão (1♂), Salesópolis (2♂, 3♀), Paranapiacaba (1♂), Alto da Serra (1♂), Ubatuba (1♂), Campo Grande (1♂, 1♀). *H. c. camargoi*. São Paulo: Itararé (4♂), Porto Cabral (1♂), Osasco (1♂, 1♀), Baurú (1?), Rio Feio (1♂, 1♀), Embu-guaçu (1♀); Paraná: Castro (1♂, 3♀), Corvo (2♂, 1♀); Santa Catarina: Porto Feliz (2♂, 3♀); Rio Grande do Sul: Canela (1♂), São João do Monte Negro (1♂).

*Remarks.* The two populations have an extensive zone of intergradation. Populations within this region tend to be quite variable in the extent of back streaking. There is a general trend toward increased number and size in the back streaks as one moves south through the zone of intergradation. However, even in the southern localities of Campo Grande and Salesópolis there are specimens with only a few hairstreaks that would appear at home among the series of *contaminatus*. There occur alongside specimens that match specimens of *camargoi*, as well as intermediate specimens.



Figure 1. Distribution of *Heliobletus contaminatus*: ●, *H. c. contaminatus*; ▲, *H. c. contaminatus* × *H. c. camargoi*; □, type locality of *H. c. camargoi*; ■, *H. c. camargoi*.

Nominate *contaminatus* is significantly larger than *camargoi* in both wing and tail measurements, populations in the zone of intergradation being intermediate (Table 1). Bill and tarsal measurements do not differ between the taxa. Despite the differences in wing and tail measurements, there is substantial overlap between the two subspecies. In the zone of intergradation, birds seem especially variable. In parallel with the plumage variation, size decreases on average from north to south. However, within localities, specimens with plumage characters resembling *contaminatus* do not tend to be larger than those resembling *camargoi*.

TABLE 1

Measurements of populations of *Heliobletus contaminatus*. The first line gives range and sample size (in parentheses), the second mean and standard deviation (in parentheses)

		Wing (flattened)	Tail
<i>H. c. contaminatus</i>	♂	70.0–78.0 (10) 73.2 (2.8)	55.0–64.0 (9) 59.0 (3.2)
	♀	67.0–71.0 (3) 68.5 (2.2)	55.0, 52.5
<i>H. c. contaminatus</i> × <i>H. c. camargoi</i>	♂	66.0–78.0 (15) 72.0 (3.0)	51.5–62.0 (15) 56.9 (3.2)
	♀	65.0–73.5 (7) 68.6 (3.3)	51.5–58.5 (7) 54.5 (2.1)
<i>H. c. camargoi</i>	♂	66.0–75.0 (11) 69.1 (2.9)	51.5–55.0 (8) 55.3 (3.0)
	♀	64.0–68.0 (11) 64.5 (1.1)	52.0–55.5 (8) 53.9 (1.3)

The pattern of variation shown by *Heliobletus contaminatus* is very similar to that in another forest furnariid endemic to southeastern Brazil, *Cichlocolaptes leucophrys*. It has a northern subspecies (*holti*) and a southern subspecies (*leucophrys*), which intergrade in the extreme northeastern part of São Paulo, Serra da Bocaina (Pinto 1978). However, *Heliobletus* shows evidence of intergradation over a wider area, extending farther to the west (to Campos do Jordão) and south (to the outskirts of the city of São Paulo), than in *Cichlocolaptes*.

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